

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SCOTT R. MEYER

Appeal No. 1997-3282
Application No. 08/189,314

ON BRIEF

Before FRANKFORT, STAAB, and NASE, Administrative Patent
Judges.

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final
rejection of claims 1 through 12, the only claims pending in
this application.

Appellant's invention relates to an improvement in release liners or films used in the tape industry to provide a release surface such that a tape can be unwound from a roll without the adhesive sticking to the backside of the tape (specification, pages 1-2). More particularly, the invention, as defined in independent claim 1, is directed to a sheet material having a pressure-sensitive acrylate-based adhesive film and a release film wherein the release film has at least a first layer of a polyolefin polymer having a density of no greater than about 0.90 g/cc and a CDBI¹ (composition distribution breadth index) of greater than about 70 percent. Alternatively, the invention, as defined in independent claim 12, is directed to a sheet material having a pressure-sensitive acrylate-based adhesive film and a multi-layer release film, wherein the pressure-sensitive adhesive film is

¹ The CDBI is defined as the weight percent of the copolymer molecule, having a comonomer content within 50 percent (i.e. $\pm 50\%$) of the median total molar comonomer content. The CDBI and the method for its determination is described in U.S. Patent No. 5,206,075 (specification, page 3).

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in contact with one layer of the release film and the second layer of the release film provides strength to the film and also serves as a high differential release liner (specification, page 5). A copy of appealed claims 1 and 12, as

they appear in the Appendix of appellant's brief, is attached to this decision.

The prior art references of record relied upon by the examiner in rejecting claims 1 through 12 are:

Shibano et al. (Shibano)	4,425,176	Jan. 10, 1984
Patterson et al. (Patterson)	4,859,511	Aug. 22, 1989
Kitano et al. (Kitano)	5,086,088	Feb. 4, 1992

Claims 1 through 8 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibano in view of Kitano.

Claims 1 through 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibano in view of Kitano

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and Patterson.

Rather than reiterate the examiner's explanation of the above-noted rejections and the conflicting viewpoints advanced by the examiner and appellant regarding the rejections, we make reference to the examiner's final rejection (Paper No. 11, mailed December 22, 1995) and answer (Paper No. 17, mailed January 16, 1997) for the reasoning in support of the rejections, and to

appellant's brief (Paper No. 16, filed October 7, 1996) for the arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and by the examiner. As a consequence of this review, we have made the determinations which follow.

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Before addressing the examiner's rejection specifically, we note that on page 4 of the brief, appellant has indicated that "claims 1-12 stand or fall together as a group." However we will separately review each of the independent claims since we note that the subject matter central to appellant's arguments with regard to independent claim 1 is absent from independent claim 12.

Shibano relates to pressure sensitive adhesive products, including tapes or double-coated tapes, having a pressure sensitive adhesive layer and one or more release layers (column 1, lines 11-16). The invention is characterized by a release layer (A) exclusively comprising a polyolefinic elastomer (a) having a predetermined shearing modulus and predetermined surface wettability and a pressure sensitive adhesive layer (F) composed mainly of a polyacrylate, wherein the release layer and the adhesive are allowed to come into contact with each other (column 1, lines 42-48). The polyolefinic elastomer (a) used as the release layer may be a polymer or a mixture of two or more polymers. Polyolefinic

elastomers that meet the shearing modulus and wettability requirements disclosed in Shibano include ethylene-alpha olefin copolymers having a density of 0.80 to 0.90 g/cm³ (column 13, lines 37-48). There is no express statement in Shibano of any particular composition distribution of the polymers disclosed therein.

Kitano relates to tapes using high performance pressure-sensitive thermosetting adhesives covered with a silicon release liner. The adhesives of this invention are said to offer excellent adhesion to metal and painted surfaces, including oily metal surfaces, as well as high shear and peel strength and excellent storage properties (column 3, lines 51-58).

Patterson relates to release sheets used with adhesive products such as adhesive tapes. The release sheets, having preferred silicone polymers as release agents, are formed on paper, nonwoven fabric, polymeric film, or extrusion-coated paper substrates wherein the coextruded films consist of two or more layers of polyester films including polybutylene

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(column 2, lines 30-47).

With respect to independent claim 1, the examiner relies on Shibano to teach all the elements of the claimed invention "except [] the acrylate-based pressure sensitive [sic, adhesive] (PSA) [being] thermosettable" (answer, page 3). The examiner introduces Kitano to teach "the advantage of using epoxy-acrylate thermosetting PSA that exhibits excellent adhesions, high shear and peel strengths, and excellent storage properties" (answer, page 3). The examiner asserts, and the appellant does not refute, that it would have been obvious to one of ordinary skill in the art to "utilize Kitano's teaching of using a thermosetting PSA comprising [an] acrylate-epoxy blend in the invention of Shibano" (answer, page 3).

Appellant's primary argument is that Shibano fails to teach, expressly or inherently, a polyolefin having the particular CDBI or comonomer/copolymer distribution content set forth in claim 1 on appeal. As a general proposition in

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an appeal involving a rejection under 35 U.S.C. § 103, the examiner is under a burden to make out a prima facie case of obviousness. Only, if that burden is met, does the burden of going forward then shift to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

We do not agree with the examiner's assertion that Shibano teaches all the elements of the claimed invention except a thermosettable acrylate-based pressure sensitive adhesive. Independent claim 1 requires "a release film comprising a first layer comprising a polyolefin polymer having a density of no greater than 0.90 g/cc **and a CDBI of greater than about 70 percent**" (emphasis ours). Although

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ethylene-alpha olefin copolymers having a density of 0.80 to 0.90 g/cm³ are taught by Shibano, there is no express or inherent teaching in Shibano of polymers having any particular CDBI and specifically a CDBI of greater than about 70 percent. Moreover, we find the examiner's position that "the claimed invention would have been obvious over the prior art of record [since applicant has failed to provide any evidence that Shibano could not have used a metallocene catalyst]" (final, page 3) untenable.

As stated above, the initial burden is on the examiner to present a prima facie case of obviousness when making a 35 U.S.C. § 103(a) rejection. **Only**, if that burden is met, does the burden of going forward **then** shift to the applicant to overcome the prima facie case with argument and/or evidence. We find nothing in Shibano that teaches, expressly or under the principles of inherency, a polyolefin polymer having a CDBI of greater than about 70 percent. The examiner has made no showing that polyolefinic elastomers used in Shibano must

have as "an essential character"² or "property"³ thereof, a CDBI of greater than about 70 percent. The fact that a certain result may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); In re Oelrich, 666 F.2d 578, 581-582, 212 USPQ 323, 326 (CCPA 1981).

Contrary to the examiner's position, Shibano discloses, from column 13, line 37 through column 14, line 21, that:

the release layer in the pressure sensitive adhesive products may be a polymer or mixture of two or more polymers. In either case, it is important that the shearing modulus is less than 2.0×10^8 dyne/cm², and that the surface wettability expressed in terms of an equilibrium contact angle with respect to a standard liquid is more than 55°, said liquid having a surface tension of 50 dyne/cm and used in JIS K 6768 test. The polyolefinic elastomers that meet the requirements as defined just above include ethylene-alpha olefin copolymers having a density of

² Inherent is defined as involved in the constitution or essential character of something. Webster's Ninth New Collegiate Dictionary, Merriam-Webster, Inc. 1984.

³ A "property" of a material is defined as a quality or trait belonging and especially peculiar to the material. Webster's Ninth New Collegiate Dictionary, Merriam-Webster, Inc. 1984.

0.80 to 0.90 g/cm³, a melting point of lower than 80° C., a brittle temperature of lower than -70° C. according to ASTM D 746 test and a hardness of lower than 70 according to JIS K 6301 test. In this connection, it should be noted that the ethylene-alpha olefin copolymers free from the physical properties as defined [sic, defined] just above, for instance those having a brittle temperature of no less than -70° C. or a melting point of no less than 80° C. exhibit considerably poor releasability and is, therefore; of practical useless [sic].

The ethylene-alpha olefin copolymers used in the present invention include copolymers comprising two or more alpha olefins such as ethylene, propylene, 1-butene, 1-pentene, 3-methyl-1-butene, 1-hexene, 3-methyl-1-pentene, 4-methyl-1-pentene etc., or a mixture thereof. Among others, preferred are a random copolymer of [ethylene]-1-butene and a copolymer of ethylene/propylene or a mixture thereof.

In addition to the above-mentioned components, the polyolefinic elastomers according to the present invention, may contain polyolefin waxes and olefinic copolymers having a crystallinity of less than 30% and graft-modified by unsaturated carboxylic acids or their derivatives without departing from the ranges as above defined on the shearing modulus and surface wettability. As the polyolefin waxes, use may be made of wax obtained by polymerization of ethylene or propylene or wax obtained by thermal cracking of ethylene or propylene. As the olefin copolymers having a crystallinity of less than 30%, mentioned are copolymers comprising two or more alpha olefins such as ethylene, propylene, 1-butene, 1-pentene, 3-methyl-1-butene, 1-hexene, 3-methyl-1-pentene, 4-methyl-1-[pentene] etc., or a mixture thereof, said

copolymers being graft-modified by unsaturated carboxylic acids or their derivatives.

In addition to the above-mentioned components, the polyolefinic elastomers may further contain dyes, pigments, weathering stabilizers, thermal stabilizers, anti-blocking agents, lubricants, antistatic agents, plasticizers, crosslinkers etc. [sic, etc.], without departing from the ranges as defined on shearing modulus and wettability in the present invention.

Shibano is silent as to the polyolefin's structural variables, such as molecular weight distribution and composition distribution which affect the ultimate properties of the polymers. Moreover, Shibano fails to teach any criticality or desirability that the polyolefin polymers used therein be homogeneous exhibiting properties such as narrow molecular weight distribution, low polydispersity, single-point melting behavior, or even sequencing of comonomers within a chain which would support the examiner's finding that Shibano inherently teaches a CDBI of greater than 70 percent.⁴

⁴ Support for our determination that homogeneous polyolefin polymers have narrow compositional distribution and thus CDBI's of generally greater than 70 percent can be found in U. S. Patent No. 5,206,075, as discussed by appellant on pages 6-7 of the brief, and newly found reference U. S. Patent (continued...)

Instead, Shibano focuses on the properties of shearing modulus and wettability of suitable polyolefin polymers and further emphasizes the critical ranges of these properties necessary in carrying out the invention. Shibano discusses the use of additives including cross-linkers and the combining of several polymers to create ethylene-alpha olefin copolymers having a density of 0.80 to 0.90 g/cm³, which clearly teaches away from using homogeneous ethylene/alpha-olefins. Our understanding, based on our evaluation of the Shibano patent, is that a person of ordinary skill in the art at the time the invention was made would have understood Shibano to teach or make obvious polyolefin polymers having a relatively wide variety of chain lengths and comonomer percentages resulting in a relatively wide variation in molecular weight and composition distributions.

We agree with the appellant to the extent that the "[e]xaminer has not cited any references which taught or

⁴(...continued)
No. 3,931,356, col. 3, lines 37-40; col. 6, lines 56-62. A copy of Dalton is attached to this decision.

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suggested that the Shibano polyolefins could have had a CDBI of greater than 70 percent or could have been made by metallocene catalysis or any other polymerization method. Further, the Examiner has failed to cite any reference that had suggested any advantage of a polyolefin having a CDBI of greater than 70 percent or suggested that one skilled in the art at the time [the invention was made] knew of [] very low density polyethylenes (VLDPE) having a narrow composition distribution" (brief, page 5). The test for obviousness is not whether the person of ordinary skill in the art **could have made** the claimed invention given the applied references and the state of the art at the time the invention was made. A conclusion that the claimed subject matter is prima facie obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

In our opinion, the examiner's position is totally without support in the applied references and is entirely based on speculation and conjecture. As previously discussed, it is well settled that inherency may not be established by probabilities or possibilities, but must instead be "the natural result flowing from the operation as taught." See Oelrich supra. In the present case, neither the Shibano patent nor the examiner provides an adequate factual basis to establish that the natural result flowing from the applied patent would have been a polyolefin polymer having a CDBI of greater than 70 percent as claimed by the appellant in claim 1.

Since the examiner has failed to provide sufficient evidence supporting a conclusion that a person of ordinary skill in the art would have known that the polyolefin polymers of Shibano inherently had a CDBI of greater than 70 percent, we find, the examiner's analysis of the collective teaching of the prior art insufficient to satisfy the burden of presenting a prima facie case of obviousness with respect to independent claim 1 on appeal. That is, the examiner's analysis is

insufficient to support a rejection under 35 U.S.C. § 103(a). Although polyolefin polymers having a very low density may indicate a narrow composition distribution as assessed by CDBI values generally above 70 percent, polymers having a low density do not **necessarily** have a narrow composition distribution.⁵ Furthermore, our review of Kitano and Patterson, applied by the Examiner, support a finding of nonobviousness since Kitano and Patterson fail to make up for the deficiencies of Shibano noted above. Therefore, the burden does not shift to the appellant to come forward with any evidence (i.e. a declaration) or arguments that a metallocene catalyst was commercially unavailable in 1979. In light of the foregoing, we will not sustain the examiner's § 103(a) rejection of independent claim 1 and claims 2 through 11 which depend therefrom.

Independent claim 12 on appeal differs from independent

⁵ See Mueller 6,027,776, column 5 line 4 through column 7, line 48 which teaches very low density polyethylene composed of either heterogeneous ethylene/alpha-olefins or homogeneous ethylene/alpha-olefins and the general properties and compositions of each. A copy is attached to this decision.

claim 1 in that claim 12 does not specifically require a polyolefin polymer having a CDBI of greater than about 70 percent. The examiner stated in both the final rejection (page 2) and the answer (page 5) that claim 12 does not recite a CDBI of greater than 70 percent, to which the appellant has failed to respond. As discussed supra, we agree with the examiner that Shibano teaches polyolefin polymers having a density of no greater than about .90 g/cc. Furthermore, the appellant has chosen not to argue the combination of the applied art used by the examiner in making the obviousness rejection of independent claim 12. Since the appellant has not specified any errors in the combination of prior art applied by the examiner, or pointed to and explained how any limitation in claim 12 renders the claimed subject matter unobvious over the applied prior art, we will sustain the examiner's rejection of claim 12 under 35 U.S.C. § 103(a).

In light of the foregoing, we reverse the examiner's rejections of claims 1-11 under 35 U.S.C. § 103(a) and sustain the examiner's rejection of claim 12 under 35 U.S.C. § 103(a) based on Shibano in view of Kitano and Patterson.

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Accordingly, the decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED-IN-PART

CHARLES E. FRANKFORT)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
LAWRENCE J. STAAB)	
Administrative Patent Judge)	APPEALS AND
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)	INTERFERENCES
)	
JEFFREY V. NASE)	
Administrative Patent Judge)	

CEF:lmb

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ROBERT W. SPRAGUE
3M OFFICE OF INTELLECTUAL
PROPERTY COUNSEL
P.O. BOX 33427
ST. PAUL, MN 55133-3427

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CLAIM 1

A sheet material comprising i) a pressure-sensitive adhesive film comprising a thermosettable pressure-sensitive adhesive comprising an acrylate polymer; and ii) a release film comprising a first layer comprising a polyolefin polymer having a density of no greater than 0.090 g/cc and a CDBI of greater than about 70 percent, said pressure-sensitive adhesive film being in contact with said first layer of said release film.

CLAIM 12

A sheet material comprising i) a pressure-sensitive adhesive film comprising a thermosettable pressure-sensitive adhesive comprising an acrylate polymer; and ii) a release film comprising a first layer comprising a polyolefin polymer having a density of no greater than about 0.90 g/cc and a second layer comprising a polybutylene homopolymer or a polybutylene copolymer comprising no more than about 5% by weight of a comonomer; said pressure-sensitive adhesive film being in contact with at least one of said layers of said release film.